**Ascaris lumbricoides (ascariasis)**

A 3-yr old girl was brought to the ER following a 3-week history of **nausea, poor appetite, and abdominal pain.** She had **not had any bowel movements** for the past two days.

The patient was of Mexican origin and had recently moved from Mexico with her mother to South Texas.

* PHYSICAL EXAM:
  + **Abdomen was distended** and tender
* LABORATORY STUDIES
  + **Blood showed Eosinophilia**
  + **Intestinal obstruction**
* DIFFERENTIAL:
  + Appendicitus
  + Intenstinal Helminth infection: Ascaris lumbricoides, Schistoma spp., Taenia spp., Trichuris trichura
  + Small bowel obstruction from volvulus
  + Rationale
    - Abdominal symptoms with Eosinophilia have a relatively limited differential, mainly parasitic infection. The various causes can be reliable determined only through stool examination for ova and parasites. Noninfectious causes may have similar symptoms but wouldn’t have eosinophilia.
* Source = Acaris lumbricoides (ascariasis)
* MICROBIOLOGICAL PROPERTIES
  + **The unfertilized eggs have a characteristic “bumpy” coat. The eggs are NOT infectious until a larva develops inside (eggs mature). Maturation of eggs requires a soil phase of ~30 days**
* MANNER OF EXPOSURE
  + In U.S. most detected from recent immigrants from developing countries.
  + Prevalence highest in children 3-8 yrs old
  + Children can acquire infection by ingestion of infective larval eggs (mature eggs) from soil contaminated by human feces.
  + Uncooked produce contaminated with human feces may also transmit infection
* PATHOGENESIS
  + (1) Human swallows infective eggs (2) Eggs hatch in intestine and are carried by portal and then systemic circulation to lung (3) in lungs larva mature and penetrate alveolar walls (4) Larvae move up bronchial tree up to epiglottis and then swallowed (5) Back in small intestine, they develop into adults worms (6) Adult worms mate and females produce eggs which are passed with feces
  + Intestinal obstruction due to large numbers of worms particularly a problem with children
  + Loeffler syndrome = lung phase of larval migration. Includes pulmonary symptoms such as cough, dyspnea, hemoptysis, and eosinophilic pneumonitis)
  + Eosinophilia =Th2 responses due to tissue invasion. TH2 cells also induce IgE Antibody formation against parasites.
* Treatment
  + Mebendazole and albendazole are DOC